CLAIMS

What is claimed is:

Claim 1. A safety enclosure for a powered reel apparatus for use with an associated elongated flexible member comprising:

a reel having a hub defining an axis of rotation and a pair of flanges at opposing ends of said hub and perpendicular to said axis of rotation;

an enclosure having left and right side wall panels, front and rear wall panels extending between said left and right side wall panels, and a cover panel, said enclosure being constructed and arranged to receive said reel, said reel being rotatably mounted within said enclosure;

at least one electric motor constructed and arranged to cooperate with said reel to provide selective power assisted rotational movement of said reel in relation to said enclosure;

a control assembly constructed and arranged to electrically connect and disconnect said at least one electric motor to and from an electrical power source, wherein operation of said control assembly in a first mode connects said electrical power source to said electric motor to cause rotation of said reel in relation to said enclosure

for powered take-up or pay out of said flexible elongate member, wherein operation of said control assembly in a second mode disconnects said electrical power source from said at least one electric motor;

at least one safety interlock means constructed and arranged to cooperate with said control assembly and said enclosure to prevent electrical connection between said electrical power source and said at least one electric motor when at least one of said enclosure panels are in an open position, thereby preventing power assisted operation of said reel.

Claim 2. The safety enclosure in accordance with claim 1 wherein, said at least one safety interlock means includes at least one switch means for monitoring said enclosure panels and disconnecting said electrical power source from said at least one electric motor when at least one of said enclosure panels are in an open position.

Claim 3. The safety enclosure in accordance with claim 2 wherein, said switch means includes at least one electrical switch, wherein said at least one electrical switch is constructed and arranged to prevent operation of said at

least one electric motor when at least one of said enclosure panels are in an open position.

Claim 4. The safety enclosure in accordance with claim 3 wherein, said switch means includes at least one mechanically actuated electrical switch, wherein said at least one mechanically actuated electrical switch is constructed and arranged to prevent operation of said at least one electric motor when at least one of said enclosure panels are in an open position.

Claim 5. The safety enclosure in accordance with claim 3 wherein, said switch means includes at least one mercury switch, wherein said at least one mercury switch is constructed and arranged to prevent operation of said at least one electric motor when at least one of said enclosure panels are in an open position.

Claim 6. The safety enclosure in accordance with claim 3 wherein, said switch means includes at least one proximity switch, wherein said at least one proximity switch is constructed and arranged to prevent operation of said at

least one electric motor when at least one of said enclosure panels are in an open position.

Claim 7. The safety enclosure in accordance with claim 3 wherein, said switch means includes at least one optical switch, wherein said at least one optical switch is constructed and arranged to prevent operation of said at least one electric motor when at least one of said enclosure panels are in an open position.

Claim 8. The safety enclosure in accordance with claim 1 wherein, said at least one safety interlock means includes an anti-tipping means for monitoring and disconnecting said electrical power source from said at least one electric motor when said enclosure is tipped beyond a predetermined range.

Claim 9. The safety enclosure in accordance with claim 8 wherein, said anti-tipping means includes at least one switch means, wherein said at least one anti-tipping switch means is constructed and arranged to prevent operation of said at least one electric motor when said enclosure is tipped beyond said predetermined range.

Claim 10. The safety enclosure in accordance with claim 9 wherein, said at least one anti-tipping switch means includes at least one mercury switch, wherein said at least one mercury switch is constructed and arranged to prevent operation of said at least one electric motor when said enclosure is tipped beyond said predetermined range.

Claim 11. The safety enclosure in accordance with claim 9 wherein, said at least one anti-tipping switch means includes at least one mechanically operated electrical switch, wherein said at least one mechanically actuated electrical switch is constructed and arranged to prevent operation of said at least one electric motor when said enclosure is tipped beyond said predetermined range.

Claim 12. The safety enclosure in accordance with claim 1 wherein, said electrical power source utilizes direct current.

Claim 13. The safety enclosure in accordance with claim 12 wherein, said direct current power source is a battery assembly, constructed and arranged for electrically polarized and mechanical engagement with said control assembly.

Claim 14. The safety enclosure in accordance with claim 1 wherein, electrical power source utilizes alternating current.

Claim 15. The safety enclosure in accordance with claim 12 wherein, said alternating current power source is household current, constructed and arranged for electrical and mechanical engagement with said control assembly.

Claim 16. The safety enclosure in accordance with claim 1 wherein, wherein said enclosure cover includes a pair of hinges for mounting said cover to said enclosure for pivotal movement between a closed position and an open position, wherein said closed position permits powered operation of said reel, wherein said open position locks out powered operation of said reel.

Claim 17. The safety enclosure in accordance with claim 16, wherein each said hinge includes a pocket formed in a respective side wall panel and a pin associated and cooperative with each said pocket, each said pocket configured to permit rotational movement of said pins for upward rotational movement of said cover.

Claim 18. The safety enclosure in accordance with claim 17, wherein said cover includes a depending lip and wherein said pins are formed as cylindrical elements extending from said depending lip, axially aligned with one another.

Claim 19. The safety enclosure in accordance with claim 1, wherein said cover includes a releasable latch means for releasably holding said cover in a closed position.

Claim 20. The safety enclosure in accordance with claim 19, wherein said releasable latch means includes at least one catch, said at least one catch extending outwardly from said depending lip and cooperating with at least one detent, said at least one detent constructed and arranged to cooperate with said catch and incorporated into said side panels;

wherein said cover is opened by lifting the front portion of said cover upwardly, urging said catches past said detents.

Claim 21. The safety enclosure in accordance with claim 1, wherein said control assembly includes at least one foot operated switch, wherein at least one of said side wall panels include a foot pedal housing extending inwardly into

said side wall panel for housing said foot operated switch, wherein selective operation of said foot operated switch electrically connects said at least one electric motor to said electrical power source for powered take-up of said flexible elongate member, wherein said foot pedal housing is constructed and arranged to protect said foot operated switch from inadvertent operation.

Claim 22. The safety enclosure in accordance with claim 1, wherein said control assembly includes at least one hand operated switch, wherein said at least one hand operated switch is secured to one of said wall panels, wherein selective operation of said hand operated switch electrically connects said at least one electric motor to said electrical power source for powered take-up of said flexible elongate member.

Claim 23. The safety enclosure in accordance with claim 1, wherein said control assembly includes two hand operated switches, wherein said two hand operated switches are secured to said wall panels, wherein powered take-up of said flexible elongate member requires about simultaneous operation of both hand operated switches, wherein said about simultaneous

operation of said two hand operated switches electrically connects said at least one electric motor to said electrical power source, wherein said two hand operated switches are spaced apart sufficiently to require two handed operation.

Claim 24. The safety enclosure in accordance with claim 1, wherein said control assembly includes at least one remote operated switch, wherein said at least one remote operated switch provides selectively electrically connects said at least one electric motor to said electrical power source for powered take-up of said flexible elongate member.

Claim 25. The safety enclosure in accordance with claim 1, wherein said enclosure includes an opening therein configured for take-up and pay-out of said flexible elongate member when said cover is in the closed position.

Claim 26. The safety enclosure in accordance with claim 1, wherein said front wall panel includes a cut-out portion at about a top edge thereof adjacent a junction with said cover when said cover is in the closed position, said cut-out configured for traversing a portion of said flexible hose

therethrough to take-up and pay-out said hose with said cover in the closed position.

Claim 27. The safety enclosure in accordance with claim 1, wherein said left and right side panels each include elongated sockets formed therein, said sockets extending along the front and back edges thereof and integral with said panels, wherein said front and rear panels include elongated contoured posts extending outwardly from ends thereof and integral therewith, the posts being adapted to insert into the sockets for securing to the left and right panels.

Claim 28. The safety enclosure in accordance with claim 1, wherein said left and right side panels each include at least one rubber pad fixedly secured to a bottom surface of each of said left and right side wall panels for engaging a surface to resist skidding of said safety enclosure device during operation.

Claim 29. The safety enclosure in accordance with claim 1, wherein said front panel of said enclosure includes an elongated cut-out portion at about a bottom edge thereof extending upwardly, said cut-out configured for accommodating

a drawer, said drawer configured to open in a pivotal fashion.

Claim 30. The safety enclosure in accordance with claim 29, wherein said drawer is constructed and arranged to include sides and a rear wall to prevent inadvertent reaching into said enclosure during operation of said reel.

Claim 31. The safety enclosure in accordance with claim 1, wherein said rear wall panel further includes at least one recessed anchoring aperture, said at least one recessed anchoring aperture configured and arranged to anchor said enclosure to a surface or a suitable structure, whereby unwanted movement of said enclosure is prevented.

Claim 32. The safety enclosure in accordance with claim 31, wherein said rear wall panel contains two said recessed anchoring apertures.

Claim 33. The safety enclosure in accordance with claim 1, wherein said enclosure further includes a bottom panel, said bottom panel having a first side and a second side, said

bottom panel extending substantially between said left, right, front, and rear wall panels.

Claim 34. The safety enclosure in accordance with claim 33, wherein said bottom panel is reversible, said first side having a surface constructed for enhanced frictional engagement and said second side having a relatively smooth surface.

claim 35. The safety enclosure in accordance with claim 1, wherein said hose winding apparatus further includes a level-wind comprising:

a double helix lead screw, said double helix lead screw substantially parallel to and spaced apart from said reel axis of rotation and suitably supported and journaled in said left and said right side wall panels;

a guide rod substantially parallel to said reel axis of rotation, suitably supported by said left and said right side wall panels;

a carriage, said carriage constructed and arranged to cooperate with said double helix lead screw and said guide rod; and

a hose guide gear-train, said gear train constructed and arranged to transfer rotary motion from said reel to said double helix lead-screw;

wherein said carriage reciprocates back and forth across said lead screw and said guide rod when said reel is rotated to uniformly and smoothly wrap said flexible elongate member on said reel for a compact storage configuration.

Claim 36. The safety enclosure in accordance with claim 35, wherein said carriage includes a follower assembly, said follower assembly constructed and arranged to cooperatively engage said lead-screw.

Claim 37. The safety enclosure in accordance with claim 36, wherein said follower assembly is manually disengageable from said lead-screw and manually re-engageable to said lead-screw, wherein said flexible elongate member can be manually pulled from said reel without reciprocation of said level-wind and said level-wind is repositionable and re-engageable to said lead-screw.

Claim 38. The safety enclosure in accordance with claim 37, wherein said follower assembly is constructed and

arranged for automatic disengagement, wherein said follower assembly disengages said lead-screw thereby preventing said carriage from traversing said lead-screw in the event said carriage path becomes obstructed and said follower is repositionable and re-engageable to said lead-screw.